STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

AMEREN ILLINOIS COMPANY	)	
	)	
Tariff filing to present the Illinois Commerce	)	
Commission with an opportunity to consider	)	Docket No. 16-0387
revenue neutral tariff changes related to rate design	)	
authorized by subsection 16-108.5(e) of the Public	)	
Utilities Act.	)	

DIRECT TESTIMONY OF SCOTT J. RUBIN

on Behalf of the People of the State of Illinois

AG Exhibit 1.0

October 4, 2016

ILLINOIS COMMERCE COMMISSION
DOCKET NO. 16-0387
AG EXHIBIT 1.0

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Introduction

Q. Please state your name.

A. My name is Scott J. Rubin. My business address is 333 Oak Lane, Bloomsburg, PA.

Q. By whom are you employed and in what capacity?

A. I am an independent consultant and an attorney. My practice is limited to matters affecting the public utility industry.

Q. What is the purpose of your testimony in this case?

A. I have been asked by the Office of the Attorney General ("AG") to review the cost of service study and proposed electric delivery service rate design filed earlier this year by Ameren Illinois Company ("Ameren," "AIC," or "Company") under Section 16-108.5(e) of the Illinois Public Utilities Act.

Q. What are your qualifications to provide this testimony in this case?

A. I have testified as an expert witness before utility commissions or courts in the District of Columbia; the province of Nova Scotia; and the states of Alaska, Arizona, California, Connecticut, Delaware, Illinois, Kentucky, Maine, Maryland, Massachusetts, Mississippi, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, and West Virginia. I also have testified as an expert witness before federal, state, and local legislative committees. In addition, I have served as a consultant to the staffs of three state utility commissions, as well as to several national utility trade associations, and state and local governments throughout the country. Prior to establishing my own consulting and law practice, I was employed by the Pennsylvania Office of Consumer Advocate ("PA Consumer

Advocate") from 1983 through January 1994 in increasingly responsible positions. From 1990 until I left state government, I was one of two senior attorneys in that office. Among my other responsibilities in that position, I had a major role in setting its policy positions on water and electric matters. In addition, I was responsible for supervising the technical staff of the PA Consumer Advocate. I also testified as an expert witness for that office on rate design and cost of service issues.

Throughout my career, I developed substantial expertise in matters relating to the economic regulation of public utilities. I have published articles, contributed to books, written speeches, and delivered numerous presentations, on both the national and state level, relating to regulatory issues. I have attended numerous continuing education courses involving the utility industry. I also have participated as a faculty member in utility-related educational programs for the Institute for Public Utilities at Michigan State University, the American Water Works Association, and the Pennsylvania Bar Institute.

Q. Do you have any experience that is particularly relevant to the issues in this case?

A. Yes. I have testified on numerous occasions as a rate design and cost of service expert. Specific to Ameren, I have testified in, or advised the AG about, several Ameren proceedings during the past decade, including Ameren's last electric rate design case in 2013-2014. My curriculum vitae is attached to this testimony as Appendix A.

Q. Since you testified in Ameren's last rate design case in 2013, have you testified in any other proceedings involving rate design for electric distribution utilities?

A. Yes. Since that case, I have testified on rate design, cost allocation, and/or tariff issues in rate cases involving the following electric utilities: Chugach Electric (Alaska),

Commonwealth Edison (Illinois), Entergy Mississippi, Massachusetts Electric, Ohio Edison, Pike County Light & Power (Pennsylvania), Potomac Electric Power (District of Columbia), United Illuminating (Connecticut), and UNS Electric (Arizona).

Q. Have you published any papers concerning rate design for electric utilities?

A. Yes, in November 2015 I published a paper entitled "Moving Toward Demand-Based Residential Rates" in *The Electricity Journal*. Because I discuss demand rates in this testimony, for ease of reference, I am attaching a copy of the paper to my testimony as AG Exhibit 1.1.

Summary

Q. What is the primary focus of your direct testimony?

A. My testimony focuses on the appropriate rate design for residential (DS-1) customers.

Q. Please summarize your conclusions and recommendations.

A. My conclusions and recommendations are summarized as follows:

- The Commission should reject Ameren's proposal to move the residential (DS-1) customer charge even further away from the customer-related cost of service.
- Ameren's proposal is based on the hypothetical effects of moving toward a demand charge for residential customers. Ameren, however, does not evaluate whether such a rate design would be consistent with principles of cost-based ratemaking.
- I have performed such an analysis on the sample group of customers Ameren used and I conclude that any likely demand-based rate actually would do a worse job of collecting revenues in proportion to the cost of serving a customer. In addition, such a rate design would have extraordinary bill impacts, resulting in annual bill increases to some customers (including electric space-heating customers) of more than 50%.

- The Commission should continue the process it started three years ago by reducing Ameren's DS-1 customer charge so that the customer and meter charges[1] collect the customer-related cost of service from the embedded cost-of-service study ("ECOSS"). (In the ECOSS, approximately 26.4% of residential costs are customer-related.) This would result in a customer charge of $6.99 per month and a meter charge of $4.77 per month.

- I conclude that my recommended rate design is reasonably consistent with the cost of serving residential customers, both overall and on an individual customer basis; has the least severe customer impact of any of the types of rate designs I evaluated, including Ameren's proposal; would not have a significant impact on most space-heating customers; and is the fairest proposal overall to all residential customers.

Background About Ameren's Residential Rate Design

Q. Are you familiar with Ameren's residential rate design?

A. Yes. I have testified on rate design issues in several of Ameren's rate cases, dating back to Ameren's 2006 cases (Docket Nos. 06-0070, *et al.*). I am familiar with the structure of Ameren's electric delivery residential rates and how that structure has changed during the past several cases.

Q. How have Ameren's residential rates changed?

A. When I first became involved with Ameren, it had a fairly traditional electric rate design for residential customers. The customer charge and meter charge collected costs that were identified in the ECOSS as being customer-related. All other costs (which are almost entirely demand-related costs) were collected through charges based on a customer's energy consumption, measured in kilowatt-hours ("kWh").

[1] The customer charge and meter charge collectively represent a utility's customer-related costs and are usually collected through a fixed charge.

That changed when Ameren persuaded the Commission to collect a portion of demand-related costs through the customer charge. At its peak, Ameren was collecting almost 45% of its total residential revenues (excluding the electricity distribution tax and other riders) through the fixed customer and meter charges, even though customer-related costs were less than 30% of the class's cost of service.

In Ameren's last electric rate design case, spanning 2013 and 2014, the Commission recognized that Ameren's residential rate design had gotten far removed from cost-based principles of ratemaking, but the Commission was concerned about the effect on electric space heating customers of reducing the customer charge and increasing per-kWh charges. Thus, even though the Commission acknowledged the merits of the AG's cost-based proposal to collect approximately 28.0% of residential costs through fixed charges, it adopted a Staff proposal to move part way toward cost-based rates in that case, collecting approximately 36.4% of residential costs through the customer and meter charges. *Ameren Illinois Company*, Docket No. 13-0476, Order on Rehearing at 41-42 (Sep. 30, 2014).

Design of Residential (DS-1) Rates

Q. How are Ameren's residential rates designed at the present time?

A. Currently, Ameren's DS-1 rates are designed to collect approximately 36.4% of residential revenues (excluding the distribution tax and riders) through the customer and meter charges. Effective January 1, 2017, considering the pending revenue requirement change in Docket No. 16-0262, I estimate that keeping the current rate design would

result in a residential customer charge of $11.41 per month and a meter charge of $4.77 per month, or total unavoidable (or fixed) charges of $16.18 per month.

Q. How does this compare with customer-related costs identified in Ameren's ECOSS?

A. Ameren's ECOSS shows that cost-based rates for DS-1 customers would have a customer charge of $6.99 per month and a meter charge of $4.77 per month, or a total of $11.76 per month. See AIC's response to Staff data request CLH 1.02(a). A cost-based rate design would collect approximately 26.4% of residential costs through the customer and meter charges.

Q. What does Ameren propose?

A. Ameren is proposing to increase the percentage of residential revenues collected through the customer and meter charges to 40%, which would result in a customer charge of $13.04 per month and total unavoidable charges of $17.81 per month. I provide a comparison of the rates and resulting residential revenues on AG Exhibit 1.2. It can be seen that all three rate options provide the same amount of revenues from the DS-1 class, and all have the same cost-based meter charges. The difference is in the amount of revenues collected through the customer charge and per-kWh charges.

Q. Why is Ameren proposing to increase the percentage of revenues collected through the customer charge when the existing charge already is much greater than customer-related costs?

A. Ameren witness Wills (Ameren Ex. 1.0 at 27) suggests that increasing the customer charge now would smooth the transition to demand-based residential rates in the future once Ameren has installed advanced metering infrastructure for all of its residential

customers (perhaps in 2020 or a later year). He uses a sample of 224 residential customers for whom the Company has a full year of hourly demand data to try to prove that higher customer charges are warranted at this time.

Q. Do you agree with Mr. Wills's initial premise, that customer charges should be moved even further from cost as a transition to future demand-based rates for DS-1 customers?

A. No, there are at least three fallacies in Mr. Wills's position. First, the purpose of any rate design is to develop rates that reasonably reflect each customer's contribution to the cost of providing service. The only reason to even consider adopting demand-based rates for residential customers (or any other significant change in rate design) is to try to be fairer to all customers in the class; that is, to better reflect each customer's contribution to the class's cost of service or to enhance the ability to achieve another goal (such as the provision of affordable service). Mr. Wills's proposal to move a rate element further away from cost makes no sense.

Second, Mr. Wills did not conduct any analysis of the cost to serve customers or explain how increasing the customer charge would be consistent with establishing cost-based rates. Here again, his approach to setting rates contradicts the foundation of fair and equitable rate design – to ensure that proposed rates reasonably reflect the customer's contribution to the cost of providing service.

Third, Mr. Wills constructs examples using the sample of 224 residential customers. Even if one were to accept that rates for one million customers should be designed based on the effects on 224 customers (which I absolutely do not accept), Mr.

Wills does not discuss the different ways in which demand charges can be designed. For example, demand charges can be established so that the charge is the same in each month (multiplying the customer's peak demand in the month by the same rate each month, such as $5.00 per kilowatt ("kW")). Demand charges also can vary by season (for example, a higher demand charge in summer months than winter months), and can have different seasonal differentials (for example, the summer rate per kW could be 25% more than the winter rate, 50% more, and so on, with literally an infinite number of variations). Mr. Wills used one example of a possible demand charge: a rate that varies seasonally with the summer rate 39% higher than the non-summer rate. He does not discuss why he thinks this particular design bears any relationship to the cost of serving residential customers. Simply stated, there are myriad different ways to design a demand charge. As I discuss below, contrary to Mr. Wills's seeming assumption, just because a rate has "demand" in the name does not mean it is reasonably related to the manner in which costs are incurred by the system.

As I mentioned, Mr. Wills never asked the most important question: How does Ameren's proposed rate design reflect the cost of serving customers? Without that question, it is impossible to know if a rate design is better or worse than another rate design. He also fails to recognize that any rate design is imprecise. We try to develop proxies for the elements of the cost of service so that the revenue requirement can be collected fairly from each customer without causing either undue discrimination or extreme bill impacts.

Q. What do you mean when you talk about proxies for elements of the cost of service?

A. In the ECOSS, costs are allocated to the residential class using allocation factors that try to reflect each class's contribution to AIC's system costs. I summarize the major cost elements for the DS-1 class on AG Exhibit 1.3. About 75% of the costs allocated to residential customers are a direct result of the demands residential customers place on the system. Those demands are measured in three ways: the class's contribution to the system's coincident peak demand ("CP"), which is the single hour of highest combined usage during the year; the class's non-coincident peak demand ("NCP"), which is the hour during the year when the combined usage of the DS-1 class was the highest; and what is known as the Sigma NCP demand, which is the sum of each individual customer's highest peak demand during the year.

AG Exhibit 1.3 calculates the unit cost to the residential class of each element of demand. For example, if a customer uses 1 kW at the time of the system CP, the customer would increase the costs allocated to the residential class by $58.84 per year.

Q. Are these unit costs important?

A. Yes, they are. The unit costs are important tools for rate design. They also allow us to calculate each customer's contribution to the class's cost of service; that is, the cost of serving each customer. That customer-specific cost of service can then be used to evaluate different rate design options to see if the rate design collects revenues that are reasonably related to the cost of serving each customer.

I emphasize that no rate design is perfect, which is why I refer to a rate design as developing proxies for costs. To have a perfect rate design, we would charge a customer only for his or her demand during three hours of the year: the hour of the CP, the hour of

the NCP, and the hour of the customer's single highest usage during the year. By this one measure, such a rate design would be "perfect" – revenues would exactly equal costs for each customer – but it would be grossly unfair to customers. No one knows when the class or system will peak until after it has occurred. So a theoretically perfect rate design would require adjusting customers' bills retroactively to reflect their actual contribution to a peak; something over which a customer would have neither notice nor control at the time the customer was making decisions about electricity consumption.

You would have "lucky" customers who happened to be away from home during the single hour of the peak and "unlucky" customers who happened to have guests during the single peak hour. There would be tremendous customer confusion and discontent because even though the rate design would result in "perfect" cost recovery, it would be nearly impossible to administer or explain. You also would have customers who used exactly the same amount of electricity in generally the same way paying very different bills. For example, assume we have two residential customers whose electricity consumption patterns are essentially identical – one customer uses the same amount of electricity as the other customer every month, and their individual monthly peak demands are the same every month. But one customer was on vacation during the week of the system peak, while the second customer was on vacation the following week. Under theoretically "perfect" pricing, they would end up paying very different bills, even though by almost every measure the typical cost to serve them should be the same.

So the goal is not a "perfect" relationship between revenues and costs, but a reasonable one – a rate design that uses proxies that will reasonably reflect the manner in

which costs are incurred (that is, one that collects more revenues from customers who contribute more to the costs to serve the customer class) while being fair to all customers.

Q. Have you constructed examples to try to test whether different types of rate designs would provide reasonable proxies for residential rates?

A. Yes. I used the same sample of 224 customers that Mr. Wills used and I evaluated eight potential rate designs against the cost of service. I show all of the rate designs I evaluated on AG Exhibit 1.4.

Initially, I must note that the rate designs, and the measure of cost, are hypothetical. I began by calculating the rates I call "36.4% Fixed." These are the rates that would go into effect on January 1, 2017, assuming the Commission adopts the Company's proposed revenue requirement for 2017[2] and makes no change in the current rate design. It can be seen from the exhibit that charging these rates would result in annual revenues from the 224 customers of $128,422. Thus, all of the other rate design options were designed to collect approximately the same amount of revenues, changing certain parameters. Similarly, the unit costs also are hypothetical, designed to have costs equal to revenues, but based on the same relationships as the real unit costs I developed on AG Exhibit 1.3.[3]

Q. Please describe each hypothetical rate design you developed and evaluated.

[2] *See* Docket No. 16-0262, AIC Exhibit 10.1, available at: https://www.icc.illinois.gov/downloads/public/edocket/431302.pdf.

[3] It was necessary to use hypothetical unit costs because the sample customers actually had revenues that exceeded the actual unit costs by more than 50%. That difference was so large that it would mask real differences among the rate designs themselves when comparing revenues to costs.

A. I developed the following hypothetical rate designs to evaluate their effect on the Company's sample of 224 DS-1 customers:

- Annual: collects customer-related costs through the customer charge and meter charge; collects demand-related costs through a rate of $6.61 per kW applied to each month's peak demand;
- Summer +25%: collects customer-related costs through the customer charge and meter charge; collects demand-related costs through demand charges that are 25% higher in the summer months (June through September) than in the remaining months;
- Summer +50%: same as Summer +25% except that the summer demand rate is 50% higher than the non-summer rate;
- Summer +100%: Same as Summer +25% except that the summer demand rate is 100% higher than the non-summer rate;
- 40.0% Fixed: collects 40% of revenues through the customer and meter charges; remaining costs are collected through per-kWh charges that are proportionate to present rates;
- 26.4% Fixed: collects 26.4% of revenues (the percentage of fixed costs in AIC's ECOSS) through the customer and meter charges; remaining costs are collected through per-kWh charges that are proportionate to present rates; and
- Summer Incline: same as 26.4% Fixed, except that an inclining block rate is used in the summer months, with usage in excess of 800 kWh per month being charged 25% more than the rate for the first 800 kWh.

Q. Do all of your hypothetical rate designs collect the same amount of revenues from the sample of 224 customers?

A. Yes, all of the options I developed collect revenues within $60 of the amount collected under the present rate design ($128,422).

Q. What did you do next?

A. I calculated the annual amount that each customer would pay under each rate design option. I also calculated each customer's annual contribution to the cost of serving the residential class. I then evaluated the differences between revenues and costs for each customer.

Q. How did you evaluate the differences between revenues and costs for each customer?

A. I performed several calculations to evaluate the differences between revenues and costs for each customer under each rate design option. Specifically, I calculated the difference between revenues and costs (for example, if revenues were $700 and costs were $800, the difference would be -$100), the absolute value of the difference between revenues and costs (if revenues were $700 and costs were $800, the absolute value of the difference would be $100), and the percentage by which revenues varied from costs (for example, if revenues were $700 and costs were $800, revenues would be 12.5% less than costs, or -12.5%).

Q. Please summarize the results of your analysis.

A. The results of my analysis begin with a summary table in AG Exhibit 1.5. The table shows each of the rate design options and how close it comes to recovering the cost to serve each customer. I grouped the results to show the number of customers whose revenues are within plus-or-minus (±) 5% of costs, ± 10% of costs, and so on up to ±50% of costs, and then the remaining customers whose revenues differ from costs by 50% or more. For example, if the cost to serve a customer were $1,000, the customer would be

in the first grouping if its revenues were between $950 and $1,050; it would be in the second grouping if revenues were between $900 and $1,100; and so on.

Q. What does the table in AG Exhibit 1.5 show?

A. This table indicates that the rate designs that use energy consumption (kWh) as a proxy do a better job of reflecting the cost to serve each customer than do the rate design options that use monthly (or billing) demand (kW). For example, if we look at the column that is ±20%, all of the energy-based rate designs have at least 99 customers paying revenues within 20% of the cost of service. In contrast, none of the demand-based rate designs have more than 95 customers within 20% of cost.

Further, within the energy-based options, the best performers are generally those that have customer and meter charges equal to customer costs: the 26.4% Fixed and Summer Incline options. Those two options are the top two options at almost every level; that is, they are the best proxies: they do the best job of collecting revenues that bear a reasonable relationship to the cost of service.

Q. Some of the differences seem pretty small; are such differences really important?

A. We do not know because of Ameren's extraordinarily small sample size. We cannot know for certain until we have demand data for all Ameren customers. When we have that, which appears to be at least three or four years away, then we will be able to use these same methodologies to evaluate different rate design options for all customers. If, however, the Company is correct that these 224 customers were selected to be representative of the entire residential class of more than 1 million customers, then each customer in the sample would represent more than 4,000 actual customers. If that is the

case, then a difference of five customers in this table would mean that more than 20,000 customers would be better (or worse) off under a particular rate design option. As I mentioned, I have not evaluated whether this sample is truly representative of Ameren's entire residential customer base, but if it is, then even small differences in these results would affect many thousands of real customers.

Q. Did you perform any other analyses to evaluate the differences among these rate design options?

A. Yes. I performed three statistical tests that measure the deviation (or dispersion) among the results in a sample and put those results into a single number. The measures I used are:

- Mean of absolute deviations which calculates the absolute value of the difference between revenues and costs for each customer, then reports the average difference;
- Median of absolute deviations which calculates the absolute value of the difference between revenues and costs for each customer, then reports the median difference (that is, the point at which 50% of the differences were higher and 50% were lower); and
- Standard deviation which is calculated based on the difference between revenues and costs for each customer, then that difference is squared; the squared amounts are then summed. That sum is divided by the number of customers and the square root is taken.[4]

From my understanding of basic statistics, each of these methods is recognized as a reasonable (though somewhat different) representation of the dispersion within a group of

[4] Technically, the standard deviation is the difference between the observed difference (revenues - costs) and the average difference between revenues and costs. In this analysis, total revenues and costs are equal to within a fraction of a percent, so the average difference always rounds to zero.

observations. For each measurement, the smaller the number (the closer to zero), the closer revenues are to costs for each customer.

Q. What are the results of your analysis of dispersion?

A. The results are shown in tabular form in AG Exhibit 1.6. I also illustrate the results for two of the options (median of absolute differences and standard deviation) in graphical form in AG Exhibit 1.7. The results provide a numeric way to express what is observed in AG Exhibit 1.5 – that the rate options that use energy consumption as a proxy are superior to the rate options that use demand charges. Under each statistical measure of dispersion, the results closest to zero (that is, the closer revenues are to cost for each customer) are those for the rate options that use energy consumption as a proxy. Further, within those energy-based rates, the option recommended by the Company – collecting 40% of revenues from fixed charges – is consistently the worst option (though it is always better than any of the options that use a demand charge).

Q. Did you also evaluate the impact on customers that would occur if one of these hypothetical rate designs were adopted for the sample group of customers?

A. Yes. For each rate design option, I calculated the percentage change in each customer's annual bill as compared to the present (36.4% fixed) rate design option. I show the results of this analysis on AG Exhibit 1.8.

That exhibit shows that changing to a demand-based rate would have extraordinary impacts on customers' bills, ranging from decreases of more than 40% to increases of 55% or more. Under each of the demand-based rate options examined, at least 26 customers (more than 11% of customers in the sample of 224 customers) would

have annual increases of more than 25%. It must be remembered that these extreme impacts occur under a revenue-neutral rate design – there is no change in the total amount of revenues collected from these 224 customers under any option. Rather, moving to any of these demand-base rate options creates winners and losers by fairly extraordinary amounts.

In contrast, the rate designs that continue to rely on energy consumption as a proxy have much less severe customer impacts. The least extreme of these rate options is moving to the cost-based rate option where 26.4% of costs are collected through the customer and meter charges. In that option, no customer would receive an annual increase of more than 5%, with lower-use customers receiving annual bill reductions.

Q. In the past, the Commission has expressed particular concern over the effects of any change in rate design on electric space-heating customers. Are there any space-heating customers in the sample of 224 customers?

A. The data set does not specifically identify space-heating customers. To get a sense of what might happen to space heating customers under the different rate design options, however, I selected customers from the sample of 224 customers whose January consumption was at least twice as much as their July consumption, and where the January consumption was at least 1,000 kWh. In my experience, this type of consumption pattern is likely to be similar to the pattern of a space-heating customer. There are 27 customers in the sample of 224 customers who met these criteria.

Q. Did you evaluate the effect of the different hypothetical rate designs on those 27 customers who are likely to be space-heating customers?

A. Yes. I present the results of my analysis of the effects on the annual bills of likely space-heating customers on AG Exhibit 1.9. On an annual basis, the effects are similar to those experienced by other customers. Rates based on demand would have a very wide range of effects on likely space-heating customers: decreases of almost 40% for some customers, while others would see annual increases of 50% or more. In contrast, the rates based on energy consumption have much smaller effects on space-heating customers' bills. The least severe effects are seen under the option where the customer and meter charges are set consistent with the results of Ameren's ECOSS: all likely space-heating customers in this sample would have annual increases of 5% or less in their annual distribution bills.

Q. Do these results make sense to you?

A. Yes, they do. While space-heating customers may not look much different from other customers in the summer, they have much higher demands in the winter. Adopting a demand-based rate does not bill customers based on demand only in the summer, but it uses a customer's monthly demand in each month of the year. Even when a demand rate is designed to have a much lower demand charge in the non-summer months, the non-summer demand charge will not be zero. For example, in my most extreme example of a seasonal demand charge (Summer +100%), there is still a demand charge in the winter ($4.60 per kW in my example, compared to a summer charge of $9.20 per kW). Even though most demand costs are driven by summer peak demands, space-heating customers are likely to peak in the winter. While this affects some of the cost to serve them (their individual peak demand, which is their contribution to the class's Sigma NCP, would be

based on winter demand and could be quite high compared to other residential customers), the biggest effect is seen on total demand charges in the winter months, even under rate options where winter demand rates are lower than summer demand rates.

Moreover, Ameren's existing rate design, which lowers the energy charge for usage in excess of 800 kWh per month in the non-summer months, is quite favorable to space-heating customers. That favorable rate treatment would be lost under a demand-based rate since it is unlikely to be practical (or fair to all customers) to tier a demand charge.

Q. Can you illustrate this problem with an example?

A. Yes. AG Exhibit 1.10 illustrates this problem. The data shown here are from an actual customer in the Company's data set. This customer has all of the characteristics of a space-heating customer – winter consumption that is much higher than summer consumption, with consumption increasing as colder weather takes hold. In this example, I compare the present rate design, the most favorable demand rate design (Summer +100%), and the cost-based rate design that uses energy consumption. Under present rates the customer would pay $710.89 per year. Under a seasonally weighted demand charge, the customer would pay $918.09 – a 29% increase. Under the cost-based energy rate design this customer would pay $726.54, an increase of just 2%.

Q. What do you conclude?

A. Based on my analysis for the sample group of customers, I conclude that the effects of moving to demand-based rates could be very severe for some electric space-heating customers. I also conclude that there should be a minor impact on space-heating

customers of adopting rates that contain a cost-based customer charge. I do not consider space-heating customer impacts to be an impediment to adopting cost-based distribution rates based on per-kWh rates; but the Commission would need to give serious and careful consideration to such impacts if it ever decided to move toward demand-based rates for residential space-heating customers.

Q. What do you recommend?

A. I recommend that the Commission adopt a rate design that uses cost-based customer and meter charges and that retains the existing energy-based rate structure. I show these rates in the "AG Proposed" column on AG Exhibit 1.2. The rates contain a customer charge of $6.99 per month, a meter charge of $4.77 per month, a rate of 5.276¢ per kWh in the summer, the first 800 kWh in the non-summer months at 3.091¢ per kWh, and non-summer usage over 800 kWh at 1.641¢ per kWh. Overall, these rates would collect 26.5% of residential revenues through the customer and meter charges, which is nearly identical to the 26.4% indicated in the ECOSS.

Q. Why do you recommend this rate design?

A. I recommend this rate design because it is reasonably consistent with the cost of serving residential customers, both overall and on an individual customer basis; it has the least severe customer impact of any of the types of rate designs I evaluated, including a lesser impact on residential customers overall than the Company's proposal to greatly increase the customer charge; it would not have a significant impact on most space-heating customers; and I consider it to be the fairest proposal overall to all residential customers.

Q. The analyses in AG Exhibits 1.5 through 1.9 indicate that a rate design that includes an inclining block rate in the summer may be superior to the rate design you recommend. Why don't you recommend an inclining block rate in the summer?

A. From my analyses based on hypothetical rate designs for the sample of 224 customers, there are indications that an inclining block rate in the summer might be an appropriate rate design for Ameren's DS-1 class. There are several reasons, however, why I am not comfortable recommending such a rate at this time.

First, my analyses are based on a sample of only 224 customers. One of those customers would have an increase of 10% in the distribution bill and another 16 would have increases in the range of 6% to 9%. In contrast, no customer in the sample had an increase of more than 5% under my recommended rate design. Given the extremely small sample and indications that some customers might see significant increases under a summer inclining block rate, I would want to investigate customer impacts of an inclining block rate for the entire DS-1 class before making such a recommendation.

Second, my analysis included an example of an inclining block rate to test the concept. Further analysis would be required to determine the appropriate breakpoint between the blocks (my example used 800 kWh, but I have not performed any analysis to determine if that is the appropriate amount of usage for inclusion in the first block) or the rate differential between the blocks (my example used second-block rates 25% higher than the first block, but again I have not performed any analysis to determine if that is the appropriate differential).

Finally, in the sample of 224 customers, there is generally a small difference in the statistics between my recommended rate design and the inclining block rate design. Given the size of the sample and the uncertainties I discussed above, I do not believe there is a compelling case to move to an inclining block rate at this time. I would recommend, however, that the Commission seriously consider an inclining-block summer rate for residential customers in Ameren's next rate design case. In that case, demand data should be available for several hundred thousand residential customers which would permit a much more robust analysis of rate design options.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Appendix A

Scott J. Rubin
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Current Position

Public Utility Attorney and Consultant. 1994 to present. I provide legal, consulting, and expert witness services to various organizations interested in the regulation of public utilities.

Previous Positions

Lecturer in Computer Science, Susquehanna University, Selinsgrove, PA. 1993 to 2000.

Senior Assistant Consumer Advocate, Office of Consumer Advocate, Harrisburg, PA. 1990 to 1994. I supervised the administrative and technical staff and shared with one other senior attorney the supervision of a legal staff of 14 attorneys.

Assistant Consumer Advocate, Office of Consumer Advocate, Harrisburg, PA. 1983 to 1990.

Associate, Laws and Staruch, Harrisburg, PA. 1981 to 1983.

Law Clerk, U.S. Environmental Protection Agency, Washington, DC. 1980 to 1981.

Research Assistant, Rockville Consulting Group, Washington, DC. 1979.

Current Professional Activities

Member, American Bar Association, Infrastructure and Regulated Industries Section.

Member, American Water Works Association.

Admitted to practice law before the Supreme Court of Pennsylvania, the New York State Court of Appeals, the United States District Court for the Middle District of Pennsylvania, the United States Court of Appeals for the Third Circuit, and the Supreme Court of the United States.

Previous Professional Activities

Member, American Water Works Association, Rates and Charges Subcommittee, 1998-2001.

Member, Federal Advisory Committee on Disinfectants and Disinfection By-Products in Drinking Water, U.S. Environmental Protection Agency, Washington, DC. 1992 to 1994.

Chair, Water Committee, National Association of State Utility Consumer Advocates, Washington, DC. 1990 to 1994; member of committee from 1988 to 1990.

Member, Board of Directors, Pennsylvania Energy Development Authority, Harrisburg, PA. 1990 to 1994.

Member, Small Water Systems Advisory Committee, Pennsylvania Department of Environmental Resources, Harrisburg, PA. 1990 to 1992.

Member, Ad Hoc Committee on Emissions Control and Acid Rain Compliance, National Association of State Utility Consumer Advocates, 1991.

Member, Nitrogen Oxides Subcommittee of the Acid Rain Advisory Committee, U.S. Environmental Protection Agency, Washington DC. 1991.

Education

J.D. with Honors, George Washington University, Washington, DC. 1981.

B.A. with Distinction in Political Science, Pennsylvania State University, University Park, PA. 1978.

Publications and Presentations (* denotes peer-reviewed publications)

1. "Quality of Service Issues," a speech to the Pennsylvania Public Utility Commission Consumer Conference, State College, PA. 1988.

2. K.L. Pape and S.J. Rubin, "Current Developments in Water Utility Law," in *Pennsylvania Public Utility Law* (Pennsylvania Bar Institute). 1990.

3. Presentation on Water Utility Holding Companies to the Annual Meeting of the National Association of State Utility Consumer Advocates, Orlando, FL. 1990.

4. "How the OCA Approaches Quality of Service Issues," a speech to the Pennsylvania Chapter of the National Association of Water Companies. 1991.

5. Presentation on the Safe Drinking Water Act to the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Seattle, WA. 1991.

6. "A Consumer Advocate's View of Federal Pre-emption in Electric Utility Cases," a speech to the Pennsylvania Public Utility Commission Electricity Conference. 1991.

7. Workshop on Safe Drinking Water Act Compliance Issues at the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Washington, DC. 1992.

8. Formal Discussant, Regional Acid Rain Workshop, U.S. Environmental Protection Agency and National Regulatory Research Institute, Charlotte, NC. 1992.

9. S.J. Rubin and S.P. O'Neal, "A Quantitative Assessment of the Viability of Small Water Systems in Pennsylvania," *Proceedings of the Eighth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute (Columbus, OH 1992), IV:79-97.

10. "The OCA's Concerns About Drinking Water," a speech to the Pennsylvania Public Utility Commission Water Conference. 1992.

11. Member, Technical Horizons Panel, Annual Meeting of the National Association of Water Companies, Hilton Head, SC. 1992.

12. M.D. Klein and S.J. Rubin, "Water and Sewer -- Update on Clean Streams, Safe Drinking Water, Waste Disposal and Pennvest," *Pennsylvania Public Utility Law Conference* (Pennsylvania Bar Institute). 1992.

13. Presentation on Small Water System Viability to the Technical Assistance Center for Small Water Companies, Pa. Department of Environmental Resources, Harrisburg, PA. 1993

14. "The Results Through a Public Service Commission Lens," speaker and participant in panel discussion at Symposium: "Impact of EPA's Allowance Auction," Washington, DC, sponsored by AER*X. 1993.

15. "The Hottest Legislative Issue of Today -- Reauthorization of the Safe Drinking Water Act," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, San Antonio, TX. 1993.

16. "Water Service in the Year 2000," a speech to the Conference: "Utilities and Public Policy III: The Challenges of Change," sponsored by the Pennsylvania Public Utility Commission and the Pennsylvania State University, University Park, PA. 1993.

17. "Government Regulation of the Drinking Water Supply: Is it Properly Focused?," speaker and participant in panel discussion at the National Consumers League's Forum on Drinking Water Safety and Quality, Washington, DC. 1993. Reprinted in *Rural Water*, Vol. 15 No. 1 (Spring 1994), pages 13-16.

18. "Telephone Penetration Rates for Renters in Pennsylvania," a study prepared for the Pennsylvania Office of Consumer Advocate. 1993.

19. "Zealous Advocacy, Ethical Limitations and Considerations," participant in panel discussion at "Continuing Legal Education in Ethics for Pennsylvania Lawyers," sponsored by the Office of General Counsel, Commonwealth of Pennsylvania, State College, PA. 1993.

20. "Serving the Customer," participant in panel discussion at the Annual Conference of the National Association of Water Companies, Williamsburg, VA. 1993.

21. "A Simple, Inexpensive, Quantitative Method to Assess the Viability of Small Water Systems," a speech to the Water Supply Symposium, New York Section of the American Water Works Association, Syracuse, NY. 1993.

22. * S.J. Rubin, "Are Water Rates Becoming Unaffordable?," *Journal American Water Works Association*, Vol. 86, No. 2 (February 1994), pages 79-86.

23. "Why Water Rates Will Double (If We're Lucky): Federal Drinking Water Policy and Its Effect on New England," a briefing for the New England Conference of Public Utilities Commissioners, Andover, MA. 1994.

24. "Are Water Rates Becoming Unaffordable?," a speech to the Legislative and Regulatory Conference, Association of Metropolitan Water Agencies, Washington, DC. 1994.

25. "Relationships: Drinking Water, Health, Risk and Affordability," speaker and participant in panel discussion at the Annual Meeting of the Southeastern Association of Regulatory Commissioners, Charleston, SC. 1994.

26. "Small System Viability: Assessment Methods and Implementation Issues," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, New York, NY. 1994.

27. S.J. Rubin, "How much should we spend to save a life?," *Seattle Journal of Commerce*, August 18, 1994 (Protecting the Environment Supplement), pages B-4 to B-5.

28. S. Rubin, S. Bernow, M. Fulmer, J. Goldstein, and I. Peters, *An Evaluation of Kentucky-American Water Company's Long-Range Planning*, prepared for the Utility and Rate Intervention Division, Kentucky Office of the Attorney General (Tellus Institute 1994).

29. S.J. Rubin, "Small System Monitoring: What Does It Mean?," *Impacts of Monitoring for Phase II/V Drinking Water Regulations on Rural and Small Communities* (National Rural Water Association 1994), pages 6-12.

30. "Surviving the Safe Drinking Water Act," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, Reno, NV. 1994.

31. "Safe Drinking Water Act Compliance -- Ratemaking Implications," speaker at the National Conference of Regulatory Attorneys, Scottsdale, AZ. 1995. Reprinted in *Water*, Vol. 36, No. 2 (Summer 1995), pages 28-29.

32. S.J. Rubin, "Water: Why Isn't it Free? The Case of Small Utilities in Pennsylvania," *Utilities, Consumers & Public Policy: Issues of Quality, Affordability, and Competition, Proceedings of the Fourth Utilities, Consumers and Public Policy Conference* (Pennsylvania State University 1995), pages 177-183.

33. S.J. Rubin, "Water Rates: An Affordable Housing Issue?," *Home Energy*, Vol. 12 No. 4 (July/August 1995), page 37.

34. Speaker and participant in the Water Policy Forum, sponsored by the National Association of Water Companies, Naples, FL. 1995.

35. Participant in panel discussion on "The Efficient and Effective Maintenance and Delivery of Potable Water at Affordable Rates to the People of New Jersey," at The New Advocacy: Protecting Consumers in the Emerging Era of Utility Competition, a conference sponsored by the New Jersey Division of the Ratepayer Advocate, Newark, NJ. 1995.

36. J.E. Cromwell III, and S.J. Rubin, *Development of Benchmark Measures for Viability Assessment* (Pa. Department of Environmental Protection 1995).

37. S. Rubin, "A Nationwide Practice from a Small Town in Pa.," *Lawyers & the Internet – a Supplement to the Legal Intelligencer and Pa. Law Weekly* (February 12, 1996), page S6.

38. "Changing Customers' Expectations in the Water Industry," speaker at the Mid-America Regulatory Commissioners Conference, Chicago, IL. 1996, reprinted in *Water* Vol. 37 No. 3 (Winter 1997), pages 12-14.

39. "Recent Federal Legislation Affecting Drinking Water Utilities," speaker at Pennsylvania Public Utility Law Conference, Pennsylvania Bar Institute, Hershey, PA. 1996.

40. "Clean Water at Affordable Rates: A Ratepayers Conference," moderator at symposium sponsored by the New Jersey Division of Ratepayer Advocate, Trenton, NJ. 1996.

41. "Water Workshop: How New Laws Will Affect the Economic Regulation of the Water Industry," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, San Francisco, CA. 1996.

42. * E.T. Castillo, S.J. Rubin, S.K. Keefe, and R.S. Raucher, "Restructuring Small Systems," *Journal American Water Works Association*, Vol. 89, No. 1 (January 1997), pages 65-74.

43. * J.E. Cromwell III, S.J. Rubin, F.C. Marrocco, and M.E. Leevan, "Business Planning for Small System Capacity Development," *Journal American Water Works Association*, Vol. 89, No. 1 (January 1997), pages 47-57.

44. "Capacity Development – More than Viability Under a New Name," speaker at National Association of Regulatory Utility Commissioners Winter Meetings, Washington, DC. 1997.

45. * E. Castillo, S.K. Keefe, R.S. Raucher, and S.J. Rubin, *Small System Restructuring to Facilitate SDWA Compliance: An Analysis of Potential Feasibility* (AWWA Research Foundation, 1997).

46. H. Himmelberger, *et al., Capacity Development Strategy Report for the Texas Natural Resource Conservation Commission* (Aug. 1997).

47. Briefing on Issues Affecting the Water Utility Industry, Annual Meeting of the National Association of State Utility Consumer Advocates, Boston, MA. 1997.

48. "Capacity Development in the Water Industry," speaker at the Annual Meeting of the National Association of Regulatory Utility Commissioners, Boston, MA. 1997.

49. "The Ticking Bomb: Competitive Electric Metering, Billing, and Collection," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, Boston, MA. 1997.

50. Scott J. Rubin, "A Nationwide Look at the Affordability of Water Service," *Proceedings of the 1998 Annual Conference of the American Water Works Association*, Water Research, Vol. C, No. 3, pages 113-129 (American Water Works Association, 1998).

51. Scott J. Rubin, "30 Technology Tips in 30 Minutes," *Pennsylvania Public Utility Law Conference*, Vol. I, pages 101-110 (Pa. Bar Institute, 1998).

52. Scott J. Rubin, "Effects of Electric and Gas Deregulation on the Water Industry," *Pennsylvania Public Utility Law Conference*, Vol. I, pages 139-146 (Pa. Bar Institute, 1998).

53. Scott J. Rubin, *The Challenges and Changing Mission of Utility Consumer Advocates* (American Association of Retired Persons, 1999).

54. "Consumer Advocacy for the Future," speaker at the Age of Awareness Conference, Changes and Choices: Utilities in the New Millennium, Carlisle, PA. 1999.

55. Keynote Address, $1 Energy Fund, Inc., Annual Membership Meeting, Monroeville, PA. 1999.

56. Scott J. Rubin, "Assessing the Effect of the Proposed Radon Rule on the Affordability of Water Service," prepared for the American Water Works Association. 1999.

57. Scott J. Rubin and Janice A. Beecher, The Impacts of Electric Restructuring on the Water and Wastewater Industry, *Proceedings of the Small Drinking Water and Wastewater Systems International Symposium and Technology Expo* (Phoenix, AZ 2000), pp. 66-75.

58. American Water Works Association, *Principles of Water Rates, Fees, and Charges, Manual M1 – Fifth Edition* (AWWA 2000), Member, Editorial Committee.

59. Janice A. Beecher and Scott J. Rubin, presentation on "Special Topics in Rate Design: Affordability" at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.

60. Scott J. Rubin, "The Future of Drinking Water Regulation," a speech at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.

61. Janice A. Beecher and Scott J. Rubin, "Deregulation Impacts and Opportunities," a presentation at the Annual Conference and Exhibition of the American Water Works Association, Denver, CO. 2000.

62. Scott J. Rubin, "Estimating the Effect of Different Arsenic Maximum Contaminant Levels on the Affordability of Water Service," prepared for the American Water Works Association. 2000.

63. * Janice A. Beecher and Scott J. Rubin, *Deregulation! Impacts on the Water Industry*, American Water Works Association Research Foundation, Denver, CO. 2000.

64. Scott J. Rubin, Methods for Assessing, Evaluating, and Assisting Small Water Systems, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2000.

65. Scott J. Rubin, Consumer Issues in the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2000.

66. "Be Utility Wise in a Restructured Utility Industry," Keynote Address at Be UtilityWise Conference, Pittsburgh, PA. 2000.

67. Scott J. Rubin, Jason D. Sharp, and Todd S. Stewart, "The Wired Administrative Lawyer," *5th Annual Administrative Law Symposium*, Pennsylvania Bar Institute, Harrisburg, PA. 2000.

68. Scott J. Rubin, "Current Developments in the Water Industry," *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2000.

69. Scott J. Rubin, "Viewpoint: Change Sickening Attitudes," *Engineering News-Record*, Dec. 18, 2000.

70. Janice A. Beecher and Scott J. Rubin, "Ten Practices of Highly Effective Water Utilities," *Opflow*, April 2001, pp. 1, 6-7, 16; reprinted in *Water and Wastes Digest*, December 2004, pp. 22-25.

71. Scott J. Rubin, "Pennsylvania Utilities: How Are Consumers, Workers, and Corporations Faring in the Deregulated Electricity, Gas, and Telephone Industries?" Keystone Research Center. 2001.

72. Scott J. Rubin, "Guest Perspective: A First Look at the Impact of Electric Deregulation on Pennsylvania," *LEAP Letter*, May-June 2001, pp. 2-3.

73. Scott J. Rubin, Consumer Protection in the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2001.

74. Scott J. Rubin, Impacts of Deregulation on the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2001.

75. Scott J. Rubin, "Economic Characteristics of Small Systems," *Critical Issues in Setting Regulatory Standards*, National Rural Water Association, 2001, pp. 7-22.

76. Scott J. Rubin, "Affordability of Water Service," *Critical Issues in Setting Regulatory Standards*, National Rural Water Association, 2001, pp. 23-42.

77. Scott J. Rubin, "Criteria to Assess the Affordability of Water Service," White Paper, National Rural Water Association, 2001.

78. Scott J. Rubin, Providing Affordable Water Service to Low-Income Families, presentation to Portland Water Bureau, Portland, OR. 2001.

79. Scott J. Rubin, Issues Relating to the Affordability and Sustainability of Rates for Water Service, presentation to the Water Utility Council of the American Water Works Association, New Orleans, LA. 2002.

80. Scott J. Rubin, The Utility Industries Compared – Water, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.

81. Scott J. Rubin, Legal Perspective on Water Regulation, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.

82. Scott J. Rubin, Regulatory Options for Water Utilities, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2002.

83. Scott J. Rubin, Overview of Small Water System Consolidation, presentation to National Drinking Water Advisory Council Small Systems Affordability Working Group, Washington, DC. 2002.

84. Scott J. Rubin, Defining Affordability and Low-Income Household Tradeoffs, presentation to National Drinking Water Advisory Council Small Systems Affordability Working Group, Washington, DC. 2002.

85. Scott J. Rubin, "Thinking Outside the Hearing Room," *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2002.

86. Scott J. Rubin, "Update of Affordability Database," White Paper, National Rural Water Association. 2003.

87. Scott J. Rubin, *Understanding Telephone Penetration in Pennsylvania*, Council on Utility Choice, Harrisburg, PA. 2003.

88. Scott J. Rubin, *The Cost of Water and Wastewater Service in the United States*, National Rural Water Association, 2003.

89. Scott J. Rubin, What Price Safer Water? Presentation at Annual Conference of National Association of Regulatory Utility Commissioners, Atlanta, GA. 2003.

90. George M. Aman, III, Jeffrey P. Garton, Eric Petersen, and Scott J. Rubin, Challenges and Opportunities for Improving Water Supply Institutional Arrangements, *Water Law Conference*, Pennsylvania Bar Institute, Mechanicsburg, PA. 2004.

91. Scott J. Rubin, Serving Low-Income Water Customers. Presentation at American Water Works Association Annual Conference, Orlando, FL. 2004.

92. Scott J. Rubin, Thinking Outside the Bill: Serving Low-Income Water Customers. Presentation at National League of Cities Annual Congress of Cities, Indianapolis, IN. 2004.

93. Scott J. Rubin, Buying and Selling a Water System – Ratemaking Implications, *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2005.

94. *Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers*, American Water Works Association. 2005; Second Edition published in 2014

95. * Scott J. Rubin, "Census Data Shed Light on US Water and Wastewater Costs," *Journal American Water Works Association*, Vol. 97, No. 4 (April 2005), pages 99-110, reprinted in Maxwell, *The Business of Water: A Concise Overview of Challenges and Opportunities in the Water Market*., American Water Works Association, Denver, CO. 2008.

96. Scott J. Rubin, Review of U.S. Environmental Protection Agency Notice Concerning Revision of National-Level Affordability Methodology, National Rural Water Association. 2006.

97. * Robert S. Raucher, et al., *Regional Solutions to Water Supply Provision*, American Water Works Association Research Foundation, Denver, CO. 2007; 2nd edition published in 2008.

98. Scott J. Rubin, Robert Raucher, and Megan Harrod, The Relationship Between Household Financial Distress and Health: Implications for Drinking Water Regulation, National Rural Water Association. 2007.

99. * John Cromwell and Scott Rubin, *Estimating Benefits of Regional Solutions for Water and Wastewater Service*, American Water Works Association Research Foundation, Denver, CO. 2008.

100. Scott J. Rubin, "Current State of the Water Industry and Stimulus Bill Overview," in *Pennsylvania Public Utility Law* (Pennsylvania Bar Institute). 2009.

101. Scott J. Rubin, Best Practice in Customer Payment Assistance Programs, webcast presentation sponsored by Water Research Foundation. 2009.

102. * Scott J. Rubin, How Should We Regulate Small Water Utilities?, National Regulatory Research Institute. 2009.

103. * John Cromwell III, et al., *Best Practices in Customer Payment Assistance Programs*, Water Research Foundation, Denver, CO. 2010.

104. * Scott J. Rubin, What Does Water Really Cost? Rate Design Principles for an Era of Supply Shortages, Infrastructure Upgrades, and Enhanced Water Conservation, , National Regulatory Research Institute. 2010.

105. Scott J. Rubin and Christopher P.N. Woodcock, Teleseminar: Water Rate Design, National Regulatory Research Institute. 2010.

106. David Monie and Scott J. Rubin, Cost of Service Studies and Water Rate Design: A Debate on the Utility and Regulatory Perspectives, Meeting of New England Chapter of National Association of Water Companies, Newport, RI. 2010.

107. * Scott J. Rubin, A Call for Water Utility Reliability Standards: Regulating Water Utilities' Infrastructure Programs to Achieve a Balance of Safety, Risk, and Cost, National Regulatory Research Institute. 2010.

108. * Raucher, Robert S.; Rubin, Scott J.; Crawford-Brown, Douglas; and Lawson, Megan M. "Benefit-Cost Analysis for Drinking Water Standards: Efficiency, Equity, and Affordability Considerations in Small Communities," *Journal of Benefit-Cost Analysis*: Vol. 2: Issue 1, Article 4. 2011.

109. Scott J. Rubin, A Call for Reliability Standards, *Journal American Water Works Association*, Vol. 103, No. 1 (Jan. 2011), pp. 22-24.

110. Scott J. Rubin, Current Topics in Water: Rate Design and Reliability. Presentation to the Water Committee of the National Association of Regulatory Utility Commissioners, Washington, DC. 2011.

111. Scott J. Rubin, Water Reliability and Resilience Standards, *Pennsylvania Public Utility Law Conference* (Pennsylvania Bar Institute). 2011.

112. Member of Expert Panel, Leadership Forum: Business Management for the Future, Annual Conference and Exposition of the American Water Works Association, Washington, DC. 2011.

113. Scott J. Rubin, Evaluating Community Affordability in Storm Water Control Plans, *Flowing into the Future: Evolving Water Issues* (Pennsylvania Bar Institute). 2011.

114. Invited Participant, Summit on Declining Water Demand and Revenues, sponsored by The Alliance for Water Efficiency, Racine, WI. 2012.

115. *Scott J. Rubin, Evaluating Violations of Drinking Water Regulations, *Journal American Water Works Association*, Vol. 105, No. 3 (Mar. 2013), pp. 51-52 (Expanded Summary) and E137-E147. Winner of the AWWA Small Systems Division Best Paper Award.

116. *Scott J. Rubin, Structural Changes in the Water Utility Industry During the 2000s, *Journal American Water Works Association*, Vol. 105, No. 3 (Mar. 2013), pp. 53-54 (Expanded Summary) and E148-E156.

117. * Scott J. Rubin, Moving Toward Demand-Based Residential Rates, *The Electricity Journal*, Vol. 28, No. 9 (Nov. 2015), pp. 63-71, http://dx.doi.org/10.1016/j.tej.2015.09.021.

118. Scott J. Rubin, Moving Toward Demand-Based Residential Rates. Presentation at the Annual Meeting of the National Association of State Utility Consumer Advocates, Austin, TX. 2015.

Testimony as an Expert Witness

1. *Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. - Water Division*, Pa. Public Utility Commission, Docket R-00922404. 1992. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate.

2. *Pa. Public Utility Commission v. Shenango Valley Water Co.*, Pa. Public Utility Commission, Docket R-00922420. 1992. Concerning cost allocation, on behalf of the Pa. Office of Consumer Advocate

3. *Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. - Water Division*, Pa. Public Utility Commission, Docket R-00922482. 1993. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate

4. *Pa. Public Utility Commission v. Colony Water Co.*, Pa. Public Utility Commission, Docket R-00922375. 1993. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate

5. *Pa. Public Utility Commission v. Dauphin Consolidated Water Supply Co. and General Waterworks of Pennsylvania, Inc.*, Pa. Public Utility Commission, Docket R-00932604. 1993. Concerning rate design and cost of service, on behalf of the Pa. Office of Consumer Advocate

6. *West Penn Power Co. v. State Tax Department of West Virginia*, Circuit Court of Kanawha County, West Virginia, Civil Action No. 89-C-3056. 1993. Concerning regulatory policy and the effects of a taxation statute on out-of-state utility ratepayers, on behalf of the Pa. Office of Consumer Advocate

7. *Pa. Public Utility Commission v. Pennsylvania Gas and Water Co. - Water Division*, Pa. Public Utility Commission, Docket R-00932667. 1993. Concerning rate design and affordability of service, on behalf of the Pa. Office of Consumer Advocate

8. *Pa. Public Utility Commission v. National Utilities, Inc.*, Pa. Public Utility Commission, Docket R-00932828. 1994. Concerning rate design, on behalf of the Pa. Office of Consumer Advocate

9. *An Investigation of the Sources of Supply and Future Demand of Kentucky-American Water Company*, Ky. Public Service Commission, Case No. 93-434. 1994. Concerning supply and demand planning, on behalf of the Kentucky Office of Attorney General, Utility and Rate Intervention Division.

10. *The Petition on Behalf of Gordon's Corner Water Company for an Increase in Rates*, New Jersey Board of Public Utilities, Docket No. WR94020037. 1994. Concerning revenue requirements and rate design, on behalf of the New Jersey Division of Ratepayer Advocate.

11. *Re Consumers Maine Water Company Request for Approval of Contracts with Consumers Water Company and with Ohio Water Service Company*, Me. Public Utilities Commission, Docket No. 94-352. 1994. Concerning affiliated interest agreements, on behalf of the Maine Public Advocate.

12. *In the Matter of the Application of Potomac Electric Power Company for Approval of its Third Least-Cost Plan*, D.C. Public Service Commission, Formal Case No. 917, Phase II. 1995. Concerning Clean Air Act implementation and environmental externalities, on behalf of the District of Columbia Office of the People's Counsel.

13. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of the Dayton Power and Light Company and Related Matters*, Ohio Public Utilities Commission, Case No. 94-

105-EL-EFC. 1995. Concerning Clean Air Act implementation (case settled before testimony was filed), on behalf of the Office of the Ohio Consumers' Counsel.

14. *Kennebec Water District Proposed Increase in Rates*, Maine Public Utilities Commission, Docket No. 95-091. 1995. Concerning the reasonableness of planning decisions and the relationship between a publicly owned water district and a very large industrial customer, on behalf of the Maine Public Advocate.

15. *Winter Harbor Water Company, Proposed Schedule Revisions to Introduce a Readiness-to-Serve Charge*, Maine Public Utilities Commission, Docket No. 95-271. 1995 and 1996. Concerning standards for, and the reasonableness of, imposing a readiness to serve charge and/or exit fee on the customers of a small investor-owned water utility, on behalf of the Maine Public Advocate.

16. *In the Matter of the 1995 Long-Term Electric Forecast Report of the Cincinnati Gas & Electric Company*, Public Utilities Commission of Ohio, Case No. 95-203-EL-FOR, and *In the Matter of the Two-Year Review of the Cincinnati Gas & Electric Company's Environmental Compliance Plan Pursuant to Section 4913.05, Revised Cost*, Case No. 95-747-EL-ECP. 1996. Concerning the reasonableness of the utility's long-range supply and demand-management plans, the reasonableness of its plan for complying with the Clean Air Act Amendments of 1990, and discussing methods to ensure the provision of utility service to low-income customers, on behalf of the Office of the Ohio Consumers' Counsel..

17. *In the Matter of Notice of the Adjustment of the Rates of Kentucky-American Water Company*, Kentucky Public Service Commission, Case No. 95-554. 1996. Concerning rate design, cost of service, and sales forecast issues, on behalf of the Kentucky Office of Attorney General.

18. *In the Matter of the Application of Citizens Utilities Company for a Hearing to Determine the Fair Value of its Properties for Ratemaking Purposes, to Fix a Just and Reasonable Rate of Return Thereon, and to Approve Rate Schedules Designed to Provide such Rate of Return*, Arizona Corporation Commission, Docket Nos. E-1032-95-417, *et al.* 1996. Concerning rate design, cost of service, and the price elasticity of water demand, on behalf of the Arizona Residential Utility Consumer Office.

19. *Cochrane v. Bangor Hydro-Electric Company*, Maine Public Utilities Commission, Docket No. 96-053. 1996. Concerning regulatory requirements for an electric utility to engage in unregulated business enterprises, on behalf of the Maine Public Advocate.

20. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Monongahela Power Company and Related Matters*, Public Utilities Commission of Ohio, Case No. 96-106-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

21. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cleveland Electric Illuminating Company and Toledo Edison Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 96-107-EL-EFC and 96-108-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

22. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 96-101-EL-EFC and 96-102-EL-EFC. 1997. Concerning the costs and

procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

23. *An Investigation of the Sources of Supply and Future Demand of Kentucky-American Water Company (Phase II)*, Kentucky Public Service Commission, Docket No. 93-434. 1997. Concerning supply and demand planning, on behalf of the Kentucky Office of Attorney General, Public Service Litigation Branch.

24. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cincinnati Gas and Electric Co. and Related Matters*, Public Utilities Commission of Ohio, Case No. 96-103-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

25. *Bangor Hydro-Electric Company Petition for Temporary Rate Increase*, Maine Public Utilities Commission, Docket No. 97-201. 1997. Concerning the reasonableness of granting an electric utility's request for emergency rate relief, and related issues, on behalf of the Maine Public Advocate.

26. *Testimony concerning H.B. 1068 Relating to Restructuring of the Natural Gas Utility Industry*, Consumer Affairs Committee, Pennsylvania House of Representatives. 1997. Concerning the provisions of proposed legislation to restructure the natural gas utility industry in Pennsylvania, on behalf of the Pennsylvania AFL-CIO Gas Utility Caucus.

27. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cleveland Electric Illuminating Company and Toledo Edison Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 97-107-EL-EFC and 97-108-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

28. *In the Matter of the Petition of Valley Road Sewerage Company for a Revision in Rates and Charges for Water Service*, New Jersey Board of Public Utilities, Docket No. WR92080846J. 1997. Concerning the revenue requirements and rate design for a wastewater treatment utility, on behalf of the New Jersey Division of Ratepayer Advocate.

29. *Bangor Gas Company, L.L.C., Petition for Approval to Furnish Gas Service in the State of Maine*, Maine Public Utilities Commission, Docket No. 97-795. 1998. Concerning the standards and public policy concerns involved in issuing a certificate of public convenience and necessity for a new natural gas utility, and related ratemaking issues, on behalf of the Maine Public Advocate.

30. *In the Matter of the Investigation on Motion of the Commission into the Adequacy of the Public Utility Water Service Provided by Tidewater Utilities, Inc., in Areas in Southern New Castle County, Delaware*, Delaware Public Service Commission, Docket No. 309-97. 1998. Concerning the standards for the provision of efficient, sufficient, and adequate water service, and the application of those standards to a water utility, on behalf of the Delaware Division of the Public Advocate.

31. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cincinnati Gas and Electric Co. and Related Matters*, Public Utilities Commission of Ohio, Case No. 97-103-EL-EFC. 1998. Concerning fuel-related transactions with affiliated companies and the appropriate ratemaking treatment and regulatory safeguards involving such transactions, on behalf of the Ohio Consumers' Counsel.

32. *Olde Port Mariner Fleet, Inc. Complaint Regarding Casco Bay Island Transit District's Tour and Charter Service*, Maine Public Utilities Commission, Docket No. 98-161. 1998. Concerning the standards and requirements for allocating costs and separating operations between regulated and unregulated operations of a transportation utility, on behalf of the Maine Public Advocate and Olde Port Mariner Fleet, Inc.

33. *Central Maine Power Company Investigation of Stranded Costs, Transmission and Distribution Utility Revenue Requirements, and Rate Design*, Maine Public Utilities Commission, Docket No. 97-580. 1998. Concerning the treatment of existing rate discounts when designing rates for a transmission and distribution electric utility, on behalf of the Maine Public Advocate.

34. *Pa. Public Utility Commission v. Manufacturers Water Company*, Pennsylvania Public Utility Commission, Docket No. R-00984275. 1998. Concerning rate design on behalf of the Manufacturers Water Industrial Users.

35. *In the Matter of Petition of Pennsgrove Water Supply Company for an Increase in Rates for Water Service*, New Jersey Board of Public Utilities, Docket No. WR98030147. 1998. Concerning the revenue requirements, level of affiliated charges, and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

36. *In the Matter of Petition of Seaview Water Company for an Increase in Rates for Water Service*, New Jersey Board of Public Utilities, Docket No. WR98040193. 1999. Concerning the revenue requirements and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

37. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 98-101-EL-EFC and 98-102-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

38. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Dayton Power and Light Company and Related Matters*, Public Utilities Commission of Ohio, Case No. 98-105-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

39. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Monongahela Power Company and Related Matters*, Public Utilities Commission of Ohio, Case No. 99-106-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

40. *County of Suffolk, et al. v. Long Island Lighting Company, et al.*, U.S. District Court for the Eastern District of New York, Case No. 87-CV-0646. 2000. Submitted two affidavits concerning the calculation and collection of court-ordered refunds to utility customers, on behalf of counsel for the plaintiffs.

41. *Northern Utilities, Inc., Petition for Waivers from Chapter 820*, Maine Public Utilities Commission, Docket No. 99-254. 2000. Concerning the standards and requirements for defining and separating a natural gas utility's core and non-core business functions, on behalf of the Maine Public Advocate.

42. *Notice of Adjustment of the Rates of Kentucky-American Water Company*, Kentucky Public Service Commission, Case No. 2000-120. 2000. Concerning the appropriate methods for allocating costs and designing rates, on behalf of the Kentucky Office of Attorney General.

43. *In the Matter of the Petition of Gordon's Corner Water Company for an Increase in Rates and Charges for Water Service*, New Jersey Board of Public Utilities, Docket No. WR00050304. 2000. Concerning the revenue requirements and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

44. *Testimony concerning Arsenic in Drinking Water: An Update on the Science, Benefits, and Costs*, Committee on Science, United States House of Representatives. 2001. Concerning the effects on low-income households and small communities from a more stringent regulation of arsenic in drinking water.

45. *In the Matter of the Application of The Cincinnati Gas & Electric Company for an Increase in Gas Rates in its Service Territory*, Public Utilities Commission of Ohio, Case No. 01-1228-GA-AIR, *et al.* 2002. Concerning the need for and structure of a special rider and alternative form of regulation for an accelerated main replacement program, on behalf of the Ohio Consumers' Counsel.

46. *Pennsylvania State Treasurer's Hearing on Enron and Corporate Governance Issues*. 2002. Concerning Enron's role in Pennsylvania's electricity market and related issues, on behalf of the Pennsylvania AFL-CIO.

47. *An Investigation into the Feasibility and Advisability of Kentucky-American Water Company's Proposed Solution to its Water Supply Deficit*, Kentucky Public Service Commission, Case No. 2001-00117. 2002. Concerning water supply planning, regulatory oversight, and related issue, on behalf of the Kentucky Office of Attorney General.

48. *Joint Application of Pennsylvania-American Water Company and Thames Water Aqua Holdings GmbH*, Pennsylvania Public Utility Commission, Docket Nos. A-212285F0096 and A-230073F0004. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Pennsylvania Office of Consumer Advocate.

49. *Application for Approval of the Transfer of Control of Kentucky-American Water Company to RWE AG and Thames Water Aqua Holdings GmbH*, Kentucky Public Service Commission, Case No. 2002-00018. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Kentucky Office of Attorney General.

50. *Joint Petition for the Consent and Approval of the Acquisition of the Outstanding Common Stock of American Water Works Company, Inc., the Parent Company and Controlling Shareholder of West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 01-1691-W-PC. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Consumer Advocate Division of the West Virginia Public Service Commission.

51. *Joint Petition of New Jersey-American Water Company, Inc. and Thames Water Aqua Holdings GmbH for Approval of Change in Control of New Jersey-American Water Company, Inc.*, New Jersey Board of Public Utilities, Docket No. WM01120833. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

52. *Illinois-American Water Company, Proposed General Increase in Water Rates*, Illinois Commerce Commission, Docket No. 02-0690. 2003. Concerning rate design and cost of service issues, on behalf of the Illinois Office of the Attorney General.

53. *Pennsylvania Public Utility Commission v. Pennsylvania-American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-00038304. 2003. Concerning rate design and cost of service issues, on behalf of the Pennsylvania Office of Consumer Advocate.

54. *West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 03-0353-W-42T. 2003. Concerning affordability, rate design, and cost of service issues, on behalf of the West Virginia Consumer Advocate Division.

55. *Petition of Seabrook Water Corp. for an Increase in Rates and Charges for Water Service*, New Jersey Board of Public Utilities, Docket No. WR3010054. 2003. Concerning revenue requirements, rate design, prudence, and regulatory policy, on behalf of the New Jersey Division of Ratepayer Advocate.

56. *Chesapeake Ranch Water Co. v. Board of Commissioners of Calvert County*, U.S. District Court for Southern District of Maryland, Civil Action No. 8:03-cv-02527-AW. 2004. Submitted expert report concerning the expected level of rates under various options for serving new commercial development, on behalf of the plaintiff.

57. *Testimony concerning Lead in Drinking Water*, Committee on Government Reform, United States House of Representatives. 2004. Concerning the trade-offs faced by low-income households when drinking water costs increase, including an analysis of H.R. 4268.

58. *West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 04-0373-W-42T. 2004. Concerning affordability and rate comparisons, on behalf of the West Virginia Consumer Advocate Division.

59. *West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 04-0358-W-PC. 2004. Concerning costs, benefits, and risks associated with a wholesale water sales contract, on behalf of the West Virginia Consumer Advocate Division.

60. *Kentucky-American Water Company*, Kentucky Public Service Commission, Case No. 2004-00103. 2004. Concerning rate design and tariff issues, on behalf of the Kentucky Office of Attorney General.

61. *New Landing Utility, Inc.*, Illinois Commerce Commission, Docket No. 04-0610. 2005. Concerning the adequacy of service provided by, and standards of performance for, a water and wastewater utility, on behalf of the Illinois Office of Attorney General.

62. *People of the State of Illinois v. New Landing Utility, Inc.*, Circuit Court of the 15th Judicial District, Ogle County, Illinois, No. 00-CH-97. 2005. Concerning the standards of performance for a water and wastewater utility, including whether a receiver should be appointed to manage the utility's operations, on behalf of the Illinois Office of Attorney General.

63. *Hope Gas, Inc. d/b/a Dominion Hope*, West Virginia Public Service Commission, Case No. 05-0304-G-42T. 2005. Concerning the utility's relationships with affiliated companies, including an appropriate level of revenues and expenses associated with services provided to and received from affiliates, on behalf of the West Virginia Consumer Advocate Division.

64. *Monongahela Power Co. and The Potomac Edison Co.*, West Virginia Public Service Commission, Case Nos. 05-0402-E-CN and 05-0750-E-PC. 2005. Concerning review of a plan to finance the construction of pollution control facilities and related issues, on behalf of the West Virginia Consumer Advocate Division.

65. *Joint Application of Duke Energy Corp., et al., for Approval of a Transfer and Acquisition of Control*, Case Kentucky Public Service Commission, No. 2005-00228. 2005. Concerning the risks and benefits associated with the proposed acquisition of an energy utility, on behalf of the Kentucky Office of the Attorney General.

66. *Commonwealth Edison Company proposed general revision of rates, restructuring and price unbundling of bundled service rates, and revision of other terms and conditions of service,* Illinois Commerce Commission, Docket No. 05-0597. 2005. Concerning rate design and cost of service, on behalf of the Illinois Office of Attorney General.

67. *Pennsylvania Public Utility Commission v. Aqua Pennsylvania, Inc.*, Pennsylvania Public Utility Commission, Docket No. R-00051030. 2006. Concerning rate design and cost of service, on behalf of the Pennsylvania Office of Consumer Advocate.

68. *Central Illinois Light Company d/b/a AmerenCILCO, Central Illinois Public Service Company d/b/a AmerenCIPS, and Illinois Power Company d/b/a AmerenIP, proposed general increases in rates for delivery service*, Illinois Commerce Commission, Docket Nos. 06-0070, et al. 2006. Concerning rate design and cost of service, on behalf of the Illinois Office of Attorney General.

69. *Grens, et al., v. Illinois-American Water Co.*, Illinois Commerce Commission, Docket Nos. 5-0681, et al. 2006. Concerning utility billing, metering, meter reading, and customer service practices, on behalf of the Illinois Office of Attorney General and the Village of Homer Glen, Illinois.

70. *Commonwealth Edison Company Petition for Approval of Tariffs Implementing ComEd's Proposed Residential Rate Stabilization Program*, Illinois Commerce Commission, Docket No. 06-0411. 2006. Concerning a utility's proposed purchased power phase-in proposal, in behalf of the Illinois Office of Attorney General.

71. *Illinois-American Water Company, Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges Pursuant to 83 Ill. Adm. Code 655*, Illinois Commerce Commission, Docket No. 06-0196. 2006. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General and the Village of Homer Glen, Illinois.

72. *Illinois-American Water Company, et al.*, Illinois Commerce Commission, Docket No. 06-0336. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Illinois Office of Attorney General.

73. *Joint Petition of Kentucky-American Water Company, et al.*, Kentucky Public Service Commission, Docket No. 2006-00197. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Kentucky Office of Attorney General.

74. *Aqua Illinois, Inc. Proposed Increase in Water Rates for the Kankakee Division*, Illinois Commerce Commission, Docket No. 06-0285. 2006. Concerning various revenue requirement, rate design, and tariff issues, on behalf of the County of Kankakee.

75. *Housing Authority for the City of Pottsville v. Schuylkill County Municipal Authority*, Court of Common Pleas of Schuylkill County, Pennsylvania, No. S-789-2000. 2006. Concerning the reasonableness and uniformity of rates charged by a municipal water authority, on behalf of the Pottsville Housing Authority.

76. *Application of Pennsylvania-American Water Company for Approval of a Change in Control*, Pennsylvania Public Utility Commission, Docket No. A-212285F0136. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Pennsylvania Office of Consumer Advocate.

77. *Application of Artesian Water Company, Inc., for an Increase in Water Rates*, Delaware Public Service Commission, Docket No. 06-158. 2006. Concerning rate design and cost of service, on behalf of the Staff of the Delaware Public Service Commission.

78. *Central Illinois Light Company, Central Illinois Public Service Company, and Illinois Power Company: Petition Requesting Approval of Deferral and Securitization of Power Costs*, Illinois Commerce Commission, Docket No. 06-0448. 2006. Concerning a utility's proposed purchased power phase-in proposal, in behalf of the Illinois Office of Attorney General.

79. *Petition of Pennsylvania-American Water Company for Approval to Implement a Tariff Supplement Revising the Distribution System Improvement Charge*, Pennsylvania Public Utility Commission, Docket No. P-00062241. 2007. Concerning the reasonableness of a water utility's proposal to increase the cap on a statutorily authorized distribution system surcharge, on behalf of the Pennsylvania Office of Consumer Advocate.

80. *Adjustment of the Rates of Kentucky-American Water Company*, Kentucky Public Service Commission, Case No. 2007-00143. 2007. Concerning rate design and cost of service, on behalf of the Kentucky Office of Attorney General.

81. *Application of Kentucky-American Water Company for a Certificate of Convenience and Necessity Authorizing the Construction of Kentucky River Station II, Associated Facilities and Transmission Main*, Kentucky Public Service Commission, Case No. 2007-00134. 2007. Concerning the life-cycle costs of a planned water supply source and the imposition of conditions on the construction of that project, on behalf of the Kentucky Office of Attorney General.

82. *Pa. Public Utility Commission v. Pennsylvania-American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-00072229. 2007. Concerning rate design and cost of service, on behalf of the Pennsylvania Office of Consumer Advocate.

83. *Illinois-American Water Company Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges*, Illinois Commerce Commission, Docket No. 07-0195. 2007. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.

84. *In the Matter of the Application of Aqua Ohio, Inc. to Increase Its Rates for Water Service Provided In the Lake Erie Division*, Public Utilities Commission of Ohio, Case No.07-0564-WW-AIR. 2007. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.

85. *Pa. Public Utility Commission v. Aqua Pennsylvania Inc.,* Pennsylvania Public Utility Commission, Docket No. R-00072711. 2008. Concerning rate design, on behalf of the Masthope Property Owners Council.

86. *Illinois-American Water Company Proposed increase in water and sewer rates*, Illinois Commerce Commission, Docket No. 07-0507. 2008. Concerning rate design and demand studies, on behalf of the Illinois Office of Attorney General.

87. *Central Illinois Light Company, d/b/a AmerenCILCO; Central Illinois Public Service Company, d/b/a AmerenCIPS; Illinois Power Company, d/b/a AmerenIP: Proposed general increase in rates for electric delivery service*, Illinois Commerce Commission Docket Nos. 07-0585, 07-0586, 07-0587. 2008. Concerning rate design and cost of service studies, on behalf of the Illinois Office of Attorney General.

88. *Commonwealth Edison Company: Proposed general increase in electric rates*, Illinois Commerce Commission Docket No. 07-0566. 2008. Concerning rate design and cost of service studies, on behalf of the Illinois Office of Attorney General.

89. *In the Matter of Application of Ohio American Water Co. to Increase Its Rates*, Public Utilities Commission of Ohio, Case No. 07-1112-WS-AIR. 2008. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.

90. *In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Authority to Increase Rates for its Gas Service*, Public Utilities Commission of Ohio, Case Nos. 07-829-GA-AIR, et al. 2008. Concerning the need for, and structure of, an accelerated infrastructure replacement program and rate surcharge, on behalf of the Office of the Ohio Consumers' Counsel.

91. *Pa. Public Utility Commission v. Pennsylvania American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-2008-2032689. 2008. Concerning rate design, cost of service study, and other tariff issues, on behalf of the Pennsylvania Office of Consumer Advocate.

92. *Pa. Public Utility Commission v. York Water Company*, Pennsylvania Public Utility Commission, Docket No. R-2008-2023067. 2008. Concerning rate design, cost of service study, and other tariff issues, on behalf of the Pennsylvania Office of Consumer Advocate.

93. *Northern Illinois Gas Company d/b/a Nicor Gas Company,* Illinois Commerce Commission, Docket No. 08-0363. 2008. Concerning rate design, cost of service, and automatic rate adjustments, on behalf of the Illinois Office of Attorney General.

94. *West Virginia American Water Company,* West Virginia Public Service Commission, Case No. 08-0900-W-42T. 2008. Concerning affiliated interest charges and relationships, on behalf of the Consumer Advocate Division of the Public Service Commission of West Virginia.

95. *Illinois-American Water Company Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges*, Illinois Commerce Commission, Docket No. 08-0218. 2008. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.

96. *In the Matter of Application of Duke Energy Ohio, Inc. for an Increase in Electric Rates*, Public Utilities Commission of Ohio, Case No. 08-0709-EL-AIR. 2009. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.

97. *The Peoples Gas Light and Coke Company and North Shore Gas Company Proposed General Increase in Rates for Gas Service*, Illinois Commerce Commission, Docket Nos. 09-0166 and 09-0167. 2009. Concerning rate design and automatic rate adjustments on behalf of the Illinois Office of Attorney General, Citizens Utility Board, and City of Chicago.

98. *Illinois-American Water Company Proposed Increase in Water and Sewer Rates*, Illinois Commerce Commission, Docket No. 09-0319. 2009. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General and Citizens Utility Board.

99. *Pa. Public Utility Commission v. Aqua Pennsylvania Inc.*, Pennsylvania Public Utility Commission, Docket No. R-2009-2132019. 2010. Concerning rate design, cost of service, and automatic adjustment tariffs, on behalf of the Pennsylvania Office of Consumer Advocate.

100. *Apple Canyon Utility Company and Lake Wildwood Utilities Corporation Proposed General Increases in Water Rates*, Illinois Commerce Commission, Docket Nos. 09-0548 and 09-0549. 2010. Concerning parent-company charges, quality of service, and other matters, on behalf of Apple Canyon Lake Property Owners' Association and Lake Wildwood Association, Inc.

101. *Application of Aquarion Water Company of Connecticut to Amend its Rate Schedules*, Connecticut Department of Public Utility Control, Docket No. 10-02-13. 2010. Concerning rate design, proof of revenues, and other tariff issues, on behalf of the Connecticut Office of Consumer Counsel.

102. *Illinois-American Water Company Annual Reconciliation Of Purchased Water and Sewage Treatment Surcharges*, Illinois Commerce Commission, Docket No. 09-0151. 2010. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.

103. *Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket Nos. R-2010-2166212, et al. 2010. Concerning rate design and cost of service study for four wastewater utility districts, on behalf of the Pennsylvania Office of Consumer Advocate.

104. *Central Illinois Light Company d/b/a AmerenCILCO, Central Illinois Public Service Company d/b/a AmerenCIPS, Illinois Power Company d/b/a AmerenIP Petition for accounting order*, Illinois Commerce Commission, Docket No. 10-0517. 2010. Concerning ratemaking procedures for a multi-district electric and natural gas utility, on behalf of the Illinois Office of Attorney General.

105. *Commonwealth Edison Company Petition for General Increase in Delivery Service Rates*, Illinois Commerce Commission Docket No. 10-0467. 2010. Concerning rate design and cost of service study, on behalf of the Illinois Office of Attorney General.

106. *Pa. Public Utility Commission v. City of Lancaster Bureau of Water*, Pennsylvania Public Utility Commission, Docket No. R-2010-2179103. 2010. Concerning rate design, cost of service, and cost allocation, on behalf of the Pennsylvania Office of Consumer Advocate.

107. *Application of Yankee Gas Services Company for Amended Rate Schedules*, Connecticut Department of Public Utility Control, Docket No. 10-12-02. 2011. Concerning rate design and cost of service for a natural

gas utility, on behalf of the Connecticut Office of Consumers' Counsel.

108. *California-American Water Company*, California Public Utilities Commission, Application 10-07-007. 2011. Concerning rate design and cost of service for multiple water-utility service areas, on behalf of The Utility Reform Network.

109. *Little Washington Wastewater Company, Inc., Masthope Wastewater Division*, Pennsylvania Public Utility Commission Docket No. R-2010-2207833. 2011. Concerning rate design and various revenue requirements issues, on behalf of the Masthope Property Owners Council.

110. *In the matter of Pittsfield Aqueduct Company, Inc.*, New Hampshire Public Utilities Commission Case No. DW 10-090. 2011. Concerning rate design and cost of service on behalf of the New Hampshire Office of the Consumer Advocate.

111. *In the matters of Pennichuck Water Works, Inc. Permanent Rate Case and Petition for Approval of Special Contract with Anheuser-Busch, Inc.*, New Hampshire Public Utilities Commission Case Nos. DW 10-091 and DW 11-014. 2011. Concerning rate design, cost of service, and contract interpretation on behalf of the New Hampshire Office of the Consumer Advocate.

112. *Artesian Water Co., Inc. v. Chester Water Authority*, U.S. District Court for the Eastern District of Pennsylvania Case No. 10-CV-07453-JP. 2011. Concerning cost of service, ratemaking methods, and contract interpretation on behalf of Chester Water Authority.

113. *North Shore Gas Company and The Peoples Gas Light and Coke Company Proposed General Increases in Rates for Gas Service*, Illinois Commerce Commission, Docket Nos. 11-0280 and 11-0281. 2011. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General, the Citizens Utility Board, and the City of Chicago.

114. *Ameren Illinois Company: Proposed general increase in electric delivery service rates and gas delivery service rates*, Illinois Commerce Commission, Docket Nos. 11-0279 and 11-0282. 2011. Concerning rate design and cost of service for natural gas and electric distribution service, on behalf of the Illinois Office of Attorney General and the Citizens Utility Board.

115. *Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket No. R-2011-2232243. 2011. Concerning rate design, cost of service, sales forecast, and automatic rate adjustments on behalf of the Pennsylvania Office of Consumer Advocate.

116. *Aqua Illinois, Inc. Proposed General Increase in Water and Sewer Rates*, Illinois Commerce Commission, Docket No. 11-0436. 2011. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General.

117. *City of Nashua Acquisition of Pennichuck Corporation*, New Hampshire Public Utilities Commission, Docket No. DW 11-026. 2011. Concerning the proposed acquisition of an investor-owned utility holding company by a municipality, including appropriate ratemaking methodologies, on behalf of the New Hampshire Office of Consumer Advocate.

118. *An Application by Heritage Gas Limited for the Approval of a Schedule of Rates, Tolls and Charges*, Nova Scotia Utility and Review Board, Case NSUARB-NG-HG-R-11. 2011. Concerning rate design and

cost of service, on behalf of the Nova Scotia Consumer Advocate.

119. *An Application of Halifax Regional Water Commission for Approval of a Cost of Service and Rate Design Methodology,* Nova Scotia Utility and Review Board , Case NSUARB-W-HRWC-R-11. 2011. Concerning rate design and cost of service, on behalf of the Nova Scotia Consumer Advocate.

120. *National Grid USA and Liberty Energy Utilities Corp.*, New Hampshire Public Utilities Commission, Docket No. DG 11-040. 2011. Concerning the costs and benefits of a proposed merger and related conditions, on behalf of the New Hampshire Office of Consumer Advocate.

121. *Great Northern Utilities, Inc., et al.*, Illinois Commerce Commission, Docket Nos. 11-0059, et al. 2012. Concerning options for mitigating rate impacts and consolidating small water and wastewater utilities for ratemaking purposes, on behalf of the Illinois Office of Attorney General.

122. *Pa. Public Utility Commission v. Aqua Pennsylvania, Inc.*, Pennsylvania Public Utility Commission, Docket No. R-2011-2267958. 2012. Concerning rate design, cost of service, and automatic rate adjustment mechanisms, on behalf of the Pennsylvania Office of Consumer Advocate.

123. *Golden State Water Company*, California Public Utilities Commission, Application 11-07-017. 2012. Concerning rate design and quality of service, on behalf of The Utility Reform Network.

124. *Golden Heart Utilities, Inc. and College Utilities Corporation*, Regulatory Commission of Alaska, Case Nos. U-11-77 and U-11-78. 2012. Concerning rate design and cost of service, on behalf of the Alaska Office of the Attorney General.

125. *Illinois-American Water Company*, Illinois Commerce Commission, Docket No. 11-0767. 2012. Concerning rate design, cost of service, and automatic rate adjustment mechanisms, on behalf of the Illinois Office of Attorney General.

126. *Application of Tidewater Utilities, Inc., for a General Rate Increase in Water Base Rates and Tariff Revisions*, Delaware Public Service Commission, Docket No. 11-397. 2012. Concerning rate design and cost of service study, on behalf of the Staff of the Delaware Public Service Commission.

127. *In the Matter of the Philadelphia Water Department's Proposed Increase in Rates for Water and Wastewater Utility Services*, Philadelphia Water Commissioner, FY 2013-2016. 2012. Concerning rate design and related issues for storm water service, on behalf of Citizens for Pennsylvania's Future.

128. *Corix Utilities (Illinois) LLC, Hydro Star LLC, and Utilities Inc. Joint Application for Approval of a Proposed Reorganization*, Illinois Commerce Commission, Docket No. 12-0279. 2012. Concerning merger-related synergy savings and appropriate ratemaking treatment of the same, on behalf of the Illinois Office of Attorney General.

129. *North Shore Gas Company and The Peoples Gas Light and Coke Company*, Illinois Commerce Commission, Docket Nos. 12-0511 and 12-0512. 2012. Concerning rate design, cost of service study, and automatic rate adjustment tariff on behalf of the Illinois Office of Attorney General.

130. *Pa. Public Utility Commission v. City of Lancaster Sewer Fund*, Pennsylvania Public Utility Commission, Docket No. R-2012-2310366. 2012. Concerning rate design, cost of service, and cost

allocation, on behalf of the Pennsylvania Office of Consumer Advocate.

131. *Aquarion Water Company of New Hampshire*, New Hampshire Public Utilities Commission, Docket No. DW 12-085. 2013. Concerning tariff issues, including an automatic adjustment clause for infrastructure improvement, on behalf of the New Hampshire Office of Consumer Advocate.

132. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates*, Public Utilities Commission of Ohio, Case No. 12-1682-EL-AIR, et al. 2013. Concerning rate design and tariff issues, on behalf of the Office of the Ohio Consumers' Counsel.

133. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Natural Gas Distribution Rates*, Public Utilities Commission of Ohio, Case No. 12-1685-GA-AIR, et al. 2013. Concerning cost-of-service study, rate design, and tariff issues, on behalf of the Office of the Ohio Consumers' Counsel.

134. *In the Matter of the Application of The Dayton Power and Light Company to Establish a Standard Service Offer in the Form of an Electric Security Plan*, Public Utilities Commission of Ohio, Case No. 12-426-EL-SSO, et al. 2013. Concerning rate design, on behalf of the Office of the Ohio Consumers' Counsel.

135. *Application of the Halifax Regional Water Commission, for Approval of Amendments to its Schedule of Rates and Charges and Schedule of Rules and Regulations for the delivery of water, public and private fire protection, wastewater and stormwater services*, Nova Scotia Utility and Review Board, Matter No. M05463, 2013. Concerning rate design, cost-of-service study, and miscellaneous tariff provisions, on behalf of the Consumer Advocate of Nova Scotia.

136. *California Water Service Co. General Rate Case Application* , California Public Utilities Commission, Docket No. A.12-07-007. 2013. Concerning rate design, phase-in plans, low-income programs, and other tariff issues, on behalf of The Utility Reform Network.

137. *Application of The United Illuminating Company to Amend its Rate Schedules*, Connecticut Public Utility Regulatory Authority, Docket No. 13-01-19. 2013. Concerning sales forecast, rate design, and other tariff issues, on behalf of the Connecticut Office of Consumer Counsel.

138. *Application of Aquarion Water Company of Connecticut to Amend its Rate Schedules*, Connecticut Public Utility Regulatory Authority, Docket No. 13-02-20. 2013. Concerning sales forecast and rate design on behalf of the Connecticut Office of Consumer Counsel.

139. *Ameren Illinois Company, Proposed General Increase in Natural Gas Delivery Service Rates*, Illinois Commerce Commission, Docket No. 13-0192. 2013. Concerning rate design and revenue allocation, on behalf of the Illinois Office of Attorney General and Citizens Utility Board.

140. *Commonwealth Edison Company, Tariff filing to present the Illinois Commerce Commission with an opportunity to consider revenue neutral tariff changes related to rate design*, Docket No. 13-0387. 2013. Concerning rate design and cost of service study issues, on behalf of the Illinois Office of Attorney General.

141. *In the Matter of the Potomac Electric Power Company for Authority to Increase Existing Retail Rates and Charges for Electric Distribution Service*, District of Columbia Public Service Commission, Formal Case No. 1103. 2013. Concerning rate design, revenue allocation, and cost-of-service study issues, on

behalf of the District of Columbia Office of Peoples' Counsel.

142. *Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket No. R-2013-2355276. 2013. Concerning rate design, revenue allocation, and regulatory policy, on behalf of the Pennsylvania Office of Consumer Advocate.

143. *In the Matter of the Revenue Requirement and Transmission Tariff Designated as TA364-*8 *filed by Chugach Electric Association, Inc.*, Regulatory Commission of Alaska, U-13-007. 2013. Concerning rate design and cost-of-service study issues, on behalf of the Alaska Office of the Attorney General.

144. *Ameren Illinois Company: Tariff filing to present the Illinois Commerce Commission with an opportunity to consider revenue neutral tariff changes related to rate design*, Docket No. 13-0476. 2013. Concerning rate design and cost of service study issues, on behalf of the Illinois Office of Attorney General.

145. *Pa. Public Utility Commission v. City of Bethlehem Bureau of Water,* Pennsylvania Public Utility Commission, Docket No. R-2013-2390244. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.

146. *In the Matter of the Tariff Revision Designated as TA332-121 filed by the Municipality of Anchorage d/b/a Municipal Light and Power Department*, Regulatory Commission of Alaska, U-13-184. 2014. Concerning rate design and cost-of-service study issues, on behalf of the Alaska Office of the Attorney General.

147. *Pa. Public Utility Commission v. Pike County Light and Power Co. - Gas*, Pennsylvania Public Utility Commission, Docket No. R-2013-2397353. 2014. Concerning rate design and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.

148. *Pa. Public Utility Commission v. Pike County Light and Power Co. - Electric*, Pennsylvania Public Utility Commission, Docket No. R-2013-2397237. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.

149. *The Peoples Gas Light and Coke Company North Shore Gas Company Proposed General Increase In Rates for Gas Service,* Illinois Commerce Commission, Docket Nos. 14-0224 and 14-0225. 2014. Concerning rate design on behalf of the Illinois Office of the Attorney General and the Environmental Law and Policy Center.

150. *Apple Valley Ranchos Water Company*, California Public Utilities Commission, Docket No. A.14-01-002. 2014. Concerning rate design and automatic rate adjustment mechanisms on behalf of the Town of Apple Valley.

151. *Application by Heritage Gas Limited for Approval to Amend its Franchise Area*, Nova Scotia Utility and Review Board, Matter No. M06271. 2014. Concerning criteria, terms, and conditions for expanding a utility's service area and using transported compressed natural gas to serve small retail customers, on behalf of the Nova Scotia Consumer Advocate.

152. *Notice of Intent of Entergy Mississippi, Inc. to Modernize Rates to Support Economic Development, Power Procurement, and Continued Investment*, Mississippi Public Service Commission Docket No. 2014-UN-132. 2014. Concerning rate design and tariff issues, on behalf of the Mississippi Public

Utilities Staff.

153. *Pa. Public Utility Commission v. City of Lancaster Bureau of Water*, Pennsylvania Public Utility Commission, Docket No. R-2014-2418872. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.

154. *Pa. Public Utility Commission v. Borough of Hanover Municipal Water Works*, Pennsylvania Public Utility Commission, Docket No. R-2014-2428304. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.

155. *Investigation of Commonwealth Edison Company's Cost of Service for Low-Use Customers In Each Residential Class*, Illinois Commerce Commission, Docket No. 14-0384. 2014. Concerning rate design on behalf of the Illinois Office of Attorney General.

156. *Application of the Halifax Regional Water Commission, for Approval of its Schedule of Rates and Charges and Schedule of Rules and Regulations for the Provision of Water, Public and Private Fire Protection, Wastewater and Stormwater Services*, Nova Scotia Utility and Review Board, Matter No. M06540. 2015. Concerning rate design, cost of service study, and tariff issues on behalf of the Nova Scotia Consumer Advocate.

157. *Testimony concerning organization and regulation of Philadelphia Gas Works*, Philadelphia City Council's Special Committee on Energy Opportunities. 2015.

158. *Testimony concerning proposed telecommunications legislation*, Maine Joint Standing Committee on Energy, Utilities, and Technology. 2015.

159. *Pa. Public Utility Commission v. United Water Pennsylvania, Inc.*, Pennsylvania Public Utility Commission, Docket No. R-2015-2462723. 2015. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.

160. *Ameren Illinois Company Proposed General Increase in Gas Delivery Service Rates*, Illinois Commerce Commission, Docket No. 15-0142. 2015. Concerning rate design on behalf of the Illinois Office of Attorney General.

161. *Maine Natural Gas Company Request for Multi-Year Rate Plan*, Maine Public Utilities Commission, Docket No. 2015-00005. 2015. Concerning rate design and automatic rate adjustment tariffs on behalf of the Maine Office of the Public Advocate.

162. *Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Authority to Provide for a Standard Service Offer*, Public Utilities Commission of Ohio, Case No. 14-1297-EL-SSO. 2015. Concerning rate design and proposed rate discounts on behalf of the Office of the Ohio Consumers' Counsel.

163. *An Application of the Halifax Regional Water Commission, for approval of revisions to its Cost of Service Manual and Rate Design for Stormwater Service*, Nova Scotia Utility and Review Board, Matter No. M07147. 2016. Concerning stormwater rate design and cost of service, on behalf of the Nova Scotia Consumer Advocate.

164. *In The Matter Of An Application By Heritage Gas Limited For Enhancement To Its Existing Residential Retro-Fit Assistance Fund*, Nova Scotia Utility and Review Board, Matter No. M07146. 2016. Concerning costs and benefits associated with utility system expansion, on behalf of the Nova Scotia Consumer Advocate.

165. *In the Matter of the Application of UNS Electric, Inc. for the Establishment of Just and Reasonable Rates and Charges*, Arizona Corporation Commission, Docket No. E-04204A-15-0142. 2016. Concerning rate design and residential demand charges on behalf of Arizona Utility Ratepayer Alliance.

166. *In the Matter of Application of Water Service Corporation of Kentucky for a General Adjustment in Existing Rates*, Kentucky Public Service Commission, Case No. 2015-00382. 2016. Concerning rate design and service area consolidation on behalf of the Kentucky Office of the Attorney General.

167. *Massachusetts Electric Company And Nantucket Electric Company*, Massachusetts Department of Public Utilities, Docket No. DPU 15-155. 2016. Concerning rate design and cost-of-service studies on behalf of the Massachusetts Office of Attorney General.

168. *In the Matter of Abenaki Water Company*, New Hampshire Public Utilities Commission, Docket No. DW 15-199. 2016. Concerning rate design on behalf of the New Hampshire Office of the Consumer Advocate.

169. *In the Matter of an Application by Heritage Gas Limited for Approval of its Customer Retention Program*, Nova Scotia Utility and Review Board Matter No. M07346. 2016. Concerning a regulatory response to competition and potential business failure on behalf of the Nova Scotia Consumer Advocate.

170. *Joint Application of Pennsylvania-American Water Company and the Sewer Authority of the City of Scranton*, Pennsylvania Public Utility Commission Docket No. A-2016-2537209. 2016. Concerning the lawfulness, costs and benefits, and ratemaking treatment of a proposed acquisition of a combined wastewater and storm water utility on behalf of the Pennsylvania Office of Consumer Advocate.

171. Application of The United Illuminating Company to Amend its Rate Schedules, Connecticut Public Utility Regulatory Authority Docket No. 16-06-04. 2016. Concerning rate design, cost-of-service study, and other tariff issues on behalf of the Connecticut Office of Consumer Counsel.